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NEOLITHIC
DEW-PONDS AND CATTLE-WAYS

NEOLITHIC DEW-PONDS AND CATTLE-WAYS

BY

ARTHUR JOHN HUBBARD, M.D.

AND

GEORGE HUBBARD, F.S.A., F.R.I.B.A.

WITH ILLUSTRATIONS

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PREFACE

In dealing with the subject of Prehistoric Man, it is impossible to speak definitely, owing to the absence of all historic records. The chief evidence of his existence is to be found in the great earthworks he constructed, and the implements he formed out of flint. It may be safely assumed that Prehistoric Man was immeasurably more exposed to attack from the animal world than his successors are to-day; and if one always bears this fact in mind, some satisfactory explanation may be found of the earthworks he constructed around his settlements, which in many cases extended for several miles from the centre of his habitation.

At the time when Prehistoric Man constructed the gigantic earthworks of the Downs in the south of England—for example, those at Cissbury, near Worthing, and Maiden Castle, near Dorchester—he had probably not discovered the art of building; but, with an infinity of patience and labour, he piled up his great earth embankments and scraped out his trenches or "valla," behind which works he lived and defended

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himself, certainly against his animal assailants, and probably against his human antagonists.

It is not known at what period these earthworks were constructed, but they probably date to a time long prior to the building of Stonehenge, which may be taken with approximate accuracy at 1800 B.C. Cissbury and Chanctonbury would therefore be far older; possibly they are 4000, perhaps 6000, years old. The latter date would make them contemporary with the Pyramid Age in Egypt.

It should be remembered that these great earthworks were constructed without the assistance of any tools made of metal. The only surviving specimens of such tools as man then employed are the rough implements he fashioned out of flint, or constructed from the antlers of the red deer, like those found in the flint mines sunk in the chalk at Cissbury years ago, and investigated by General Pitt-Rivers and others.

Flint implements may still be picked up on the surface at Cissbury. One we found, whitened by exposure, has the appearance of being of the Paleolithic period; but it more probably belongs to the Neolithic.

Sir John Evans is of opinion that a regular manufactory of flint implements was carried on at Cissbury, and that some of the depressions in the ground to which we shall afterwards refer were entrances to the old workings of flint quarries. Though the surface of the ground is strewn with flints in all directions, the quality of the flints on the surface was not, he thinks, considered suitable for implements by Neolithic Man.

No doubt some of the depressions or sinkings in the ground were entrances to the old workings, but we are of opinion that the smaller cup-shaped depressions represent the sites of Neolithic Man's dwellings.

To these we shall refer more particularly when describing that settlement of Neolithic Man which comprised Cissbury Ring and Chanctonbury Ring.

85 Gresham Street, E.C.
1904.

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"*We have no waters to delight*
Our broad and brookless vales—
Only the dew-pond on the height
Unfed, that never fails,
Whereby no tattered herbage tells
Which way the season flies—
Only the close-bit thyme that smells
Like Dawn in Paradise."

RUDYARD KIPLING,
"The Five Nations" (Sussex).

NEOLITHIC DEW-PONDS AND CATTLE-WAYS

I

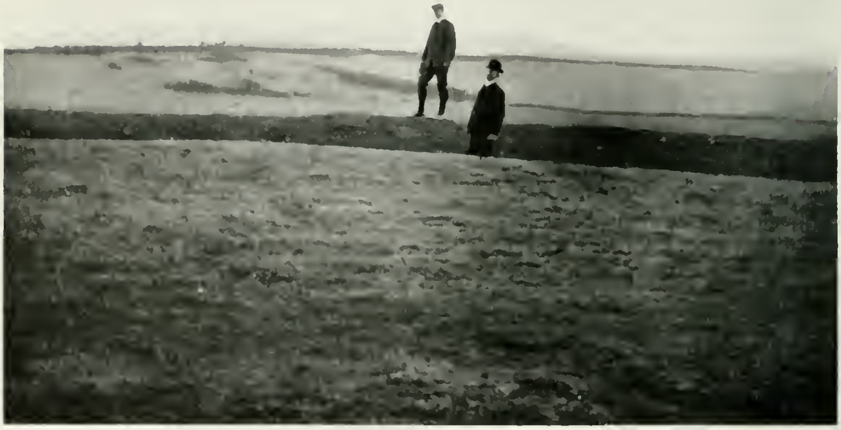
NOTES ON THE WORKS AT CISSBURY RING AND CHANCTONBURY RING, AND ON THE EVIDENCE OF A ROMAN RESORT WITHIN CHANCTONBURY RING.

Perhaps all those who have tried to realise the mode of life of the inhabitants of hill-encampments have found the question of the water-supply their greatest difficulty. General Pitt-Rivers and others have conjectured that there may have been wells within or near the entrenchments; while some, equally at a loss for a solution of the problem, have suggested that these encampments were only resorted to in time of sudden and transient emergency. As to the well theory—setting aside the difficulty of imagining that neolithic man had engineering skill and appliances to enable him to reach the water-level from a height such as Chanctonbury—we may point out that no vestige of a contemporary well has ever been discovered. As to the other suggestion, that of the transitory character of the occupation of these earthworks, a good deal of evidence in opposition to it will be offered when we deal with the Cattle-ways and their connection with the fortified Dew-ponds which are to be found at Chanctonbury and Cissbury.

Striking inland from Worthing, one climbs the Downs to-day by a rough road which leads directly to Cissbury Ring. Soon after leaving the flat land which, at an earlier epoch, was probably a salt marsh, one comes upon a depression in the ground near a disused windmill. This is a dried-up dew-pond which was originally surrounded by an artificial depression in the ground with an embankment beyond. Before, however, entering on the special subject of this paper, it may be well to say a few words on the theory and practical making of dew-ponds in general.

We are not aware that the thermodynamics of a dew-pond have ever been elucidated, and it is evident that this cannot be done until the construction of such a pond is understood. There is still in this country at least one wandering gang of men (analogous to the mediæval bands of bell-founders, masons, &c.) who will construct for the modern farmer a pond which, in any situation in a sufficiently dry soil, will always contain water, more in the heat of summer than during the winter rains. This water is not derived from springs or rainfall, and is speedily lost if even the smallest rivulet is allowed to flow into the pond. The gang of dew-pond makers commence operations by hollowing out the earth for a space far in excess of the apparent requirements of the proposed pond. They then thickly cover the whole of the hollow with a coating of dry straw. The straw in its turn is covered by a layer of well-chosen, finely puddled clay, and the upper surface of the clay is then closely strewn with stones. Care has to be taken that the margin of the straw is effectively protected by clay. The pond will gradually become filled with water, the more rapidly the larger it is, even though no rain may fall. If such a structure is situated on the summit of a down, during the warmth of a summer day the earth will have stored a considerable amount of heat, while the pond, protected from this heat by the non-conductivity of the straw, is at the same time chilled by the process of evaporation from the puddled clay. The consequence is that during the night the moisture of the comparatively warm air is condensed on the surface of the cold clay. As the condensation during the night is in excess of the evaporation during the day, the pond becomes, night by night, gradually filled. Theoretically, we may observe that during the day the air being comparatively charged with moisture, evaporation is necessarily less than the precipitation during the night. In practice it is found that the pond will constantly yield a supply of the purest water.

The dew-pond will cease to attract the dew if the layer of straw should get wet, as it then becomes of the same temperature as the surrounding earth, and ceases to act as a non-conductor of heat. This, practically, always occurs if a spring is allowed to flow into the pond, or if the layer of clay (technically called the "crust") is pierced.



1.—DRIED-UP DEW-POND NEAR CISSBURY, FORTIFIED BY A SURROUNDING DITCH AND EARTHEN WALL.

Now to return to this depression in the ground which we called a dried-up dew-pond. Such in fact it is; and the question now arises—When was this dew-pond constructed? Standing upon the Downs above it may be seen the gigantic outlines of Cissbury Ring, the work of neolithic man. Dew-ponds such as this are only found within the area surrounding these neolithic settlements, and thus a presumption is raised that we may find their origin in the same epoch. That supposition, moreover, is confirmed in connection with the dew-pond of which we are speaking by the fact that it appears to be thoroughly fortified by a surrounding ditch and earthen wall, precisely similar to, though on a lesser scale than, the great prehistoric earthworks on the top of the Downs.

II.—NEOLITHIC ROADWAY LEADING TO SOUTHERN FACE OF CISSBURY RING.

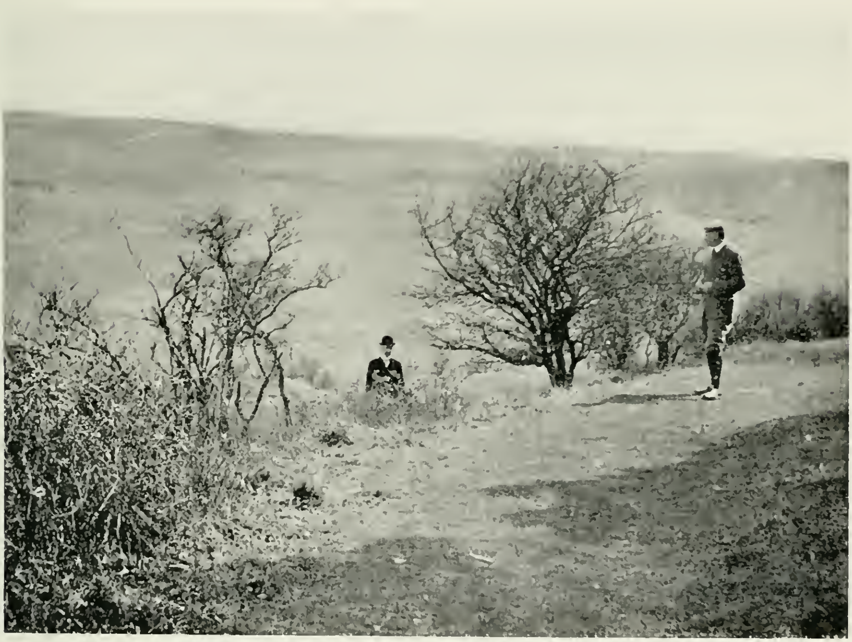
In these facts we find a solution of the long-standing problem of the water-supply of these elevated settlements.

Leaving this pond behind us, and merely noting that it is fortified on account of its distance from the Ring, we ascend the Downs in the direction of Cissbury. Turning to the right through the woods when within a few hundred yards of the great southern entrance of the Ring, we come upon a rolling tract of comparatively low-lying country, to the south of the main structure; and here a grassy roadway will be met with, from which a good view may be had over the valley below.

This roadway is of no modern construction; its smooth surface was doubtless formed on the face of the Downs when neolithic man built his embankments around Cissbury, to which the roadway directly leads.

Looking down from this grassy way into the valley below there may be seen another dried-up dew-pond; and to the north of this may be traced the outlines of great terraces cut in successive steps on the face of the opposite Downs, the artificially level platforms of which vary from 130 to 150 yards in width, and the rises vary from 10 to 20 feet.

There may be considerable doubt as to the purpose of these terraces. It has been suggested that they were formed for purposes of cultivation; or that they may have been used as an outer defence to Cissbury. At any rate they are so situated as to afford an efficient defence if required against an attack by wolves coming up the valley. This defence would be the more needed because the folding of the Downs shuts out any distant view in this direction. Wolves might be tempted to approach the settlement by the herds which we shall presently show were kept within the Rings at Cissbury.



III.—ANOTHER VIEW OF THE SAME NEOLITHIC ROADWAY IN THE FOREGROUND. THE TERRACES ON THE OTHER SIDE OF THE VALLEY MAY BE SEEN FROM THIS POSITION.

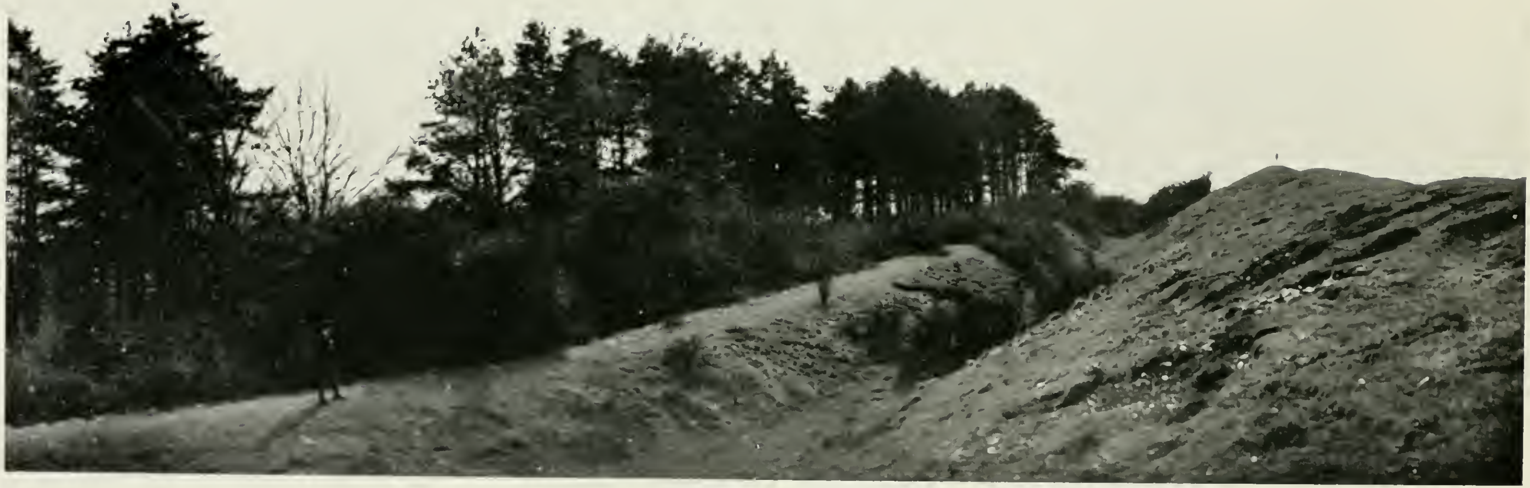
Still farther to the east are many traces of a system of defence. In fact, we are not overstating the case if we say that some form of protection may be traced wherever an incursion might be feared. Perhaps some distinction may be drawn between the forms of defence which are constructed with a ditch and embankments, and those which simply have an embankment and no ditch.

Both these forms of defence may be met with around Cissbury.

It seems to us probable that the embankments which are provided with a ditch were built against an adversary capable of using projectiles, as cover could be obtained by concealment in the ditch. The embankments which are not so provided may very possibly have been simply intended as a defence against an animal attack. These low embankments without a ditch may generally be found for many miles around the sites selected by neolithic man for his settlements.

It seems incredible that these extensive earthworks could have been defended by the inhabitants of the settlements; for this presupposes a vast population, too vast, it appears to us, to have been supported by the available cultivated land contained within the defended area around the settlements. Besides, if the level land below the Downs were swampy or covered with forests it becomes a little difficult to see where the opposing enemy could have lived.

To us the explanation of these low earthen embankments appears to be that they were intended as defences against animals. Probably a palisading surmounted the embankments, thus forming them into an effective barrier against wolves, which we suppose must



IV.—VIEW OF INNER AND OUTER EMBANKMENTS AT CISSBURY RING.

have been the chief source of danger to the herds and inhabitants of the settlements.

Cissbury Ring itself is an immense structure, surrounding the top of an elevated down, roughly oval,

V.—DEPRESSION MARKING THE SITE OF A GUARD-HOUSE JUST OUTSIDE THE SOUTHERN ENTRANCE TO CISSBURY RING.

and having a circumference of about a mile and a half. An inner and an outer circular embankment exist, separated by a deep ditch, the height of the inner ring being frequently as much as 40 feet from the bottom of the ditch.

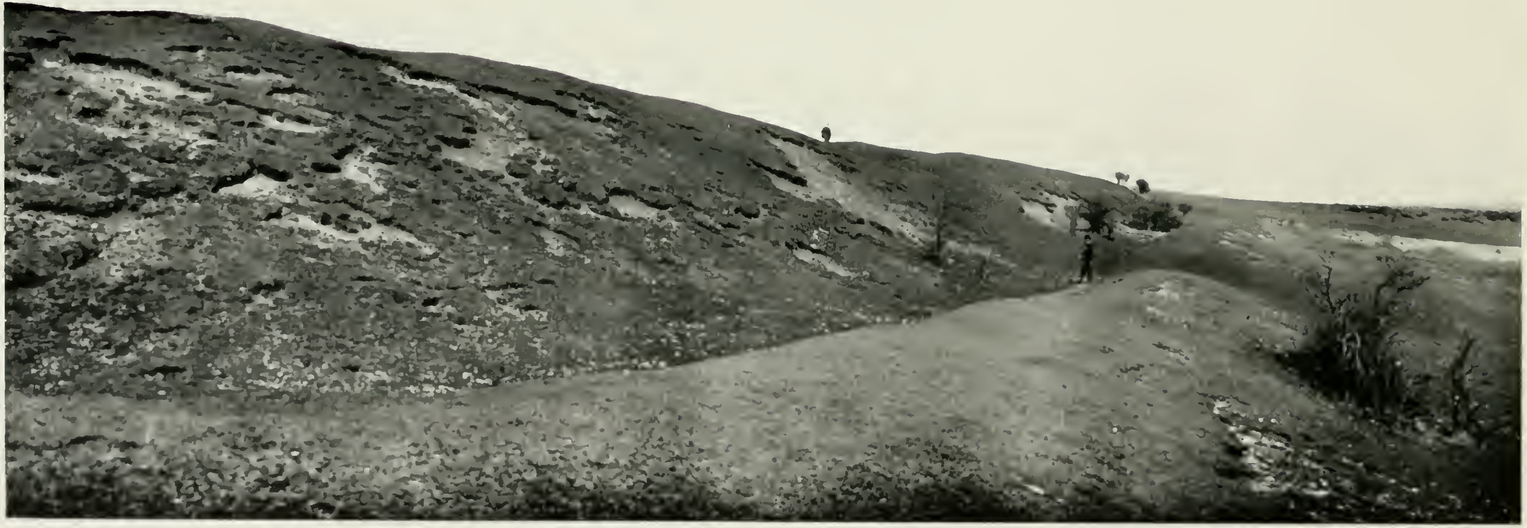
These Rings are pierced at various points with openings, which will be dealt with separately.

It may be remembered that we diverged from the direct path into the Ring. This path leads to the main entrance, which is situated in the western part of the southern aspect.

The ditch between the rims is here at the southern entrance filled up, and the great inner ring is cleft; but outside the earth which fills the ditch, and close to the end of the ring, is a deep depression which marks the site of a guard-house.

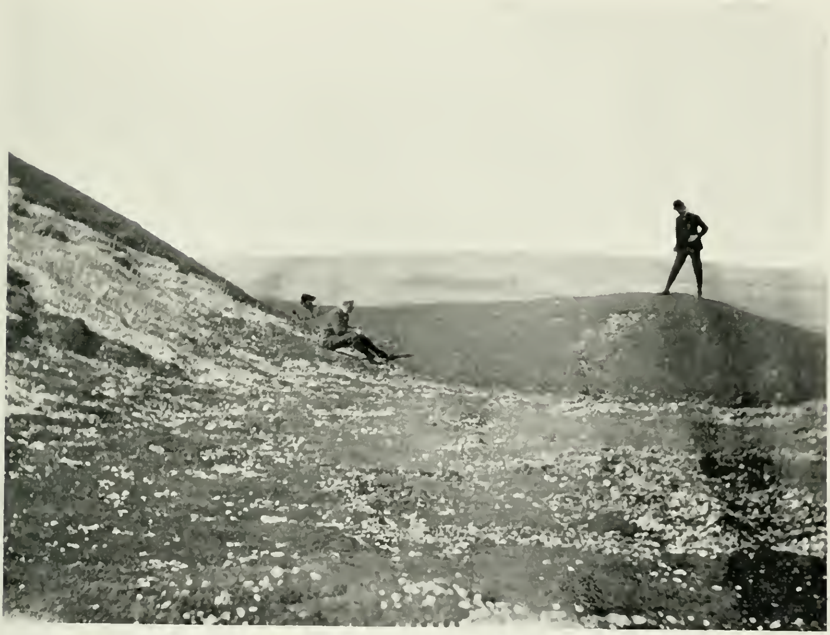
Many such depressions are found within the Ring. They are generally of approximately the same area and depth—3 or 4 feet deep, and 10 to 12 feet in diameter. These depressions are all that remain of the dwellings of prehistoric man. The larger and deeper depressions may be the shafts leading to underground flint quarries which were excavated by General Pitt-Rivers. Turning to the east within the great entrance we presently arrive at one of these smaller depressions within the inner ring and close to an entrance, which is above the platforms. At this entrance it may be seen that the outer embankment is cleft and the inner one only partially so. This depression is suitably chosen for the dwelling of the man whose duty it may have been to keep a look-out over the falling land on which the terraces have been constructed—a sort of watchman's house.

Proceeding on our course, we come to the eastern



VI.—CLEFT IN THE OUTER RING AT CISSBURY AT A POINT OVERLOOKING THE TERRACES.

entrance. Here we find the traces of guard-houses outside, unique in that they have rectangular ground plans. These occupy the space which would otherwise have been taken up by the ends of the outer Ring.



VII.—EASTERN ENTRANCE TO CISSBURY RING SHOWING TRACES OF RECTANGULAR GUARD-HOUSES.

It is curious to note that here, unlike the great southern entrance, which has merely an outside guard-house, this entrance has not only guard-houses, but that immediately within are the remains of a dwelling. The position of this dwelling, situated as it is at the point where the cattle, as we shall proceed to show, entered and left the Ring, seems to suggest that the cattle were counted. Perhaps it may have been a cattle tally-house.

Leading from the outside of this eastern entrance, two almost parallel artificial gullies or cattle-ways are deeply scored upon the side of the down. They wind round the north-east shoulder of the down, and arrive on level ground at a point directly to the north of the Ring. At their terminations on the level ground lies a dew-pond, still full of water.

VIII.—CATTLE-WAYS LEADING DOWN TO DEW-POND AT THE NORTH OF CISSBURY RING.

Apparently the herds were driven down the lower road, which leads most directly to the dew-pond, and, after being watered, were driven back again by the upper of the two roads, the confusion which would have been caused by the passing of animals going in opposite directions upon the same road being thus avoided.

We point out that the existence of these two cattle-ways leading directly to a dew-pond is further evidence in support of our contention that some of these ponds are contemporary with the hill-settlements. Immediately adjacent to this dew-pond, which is without defensive earthworks, lie the traces of a prehistoric habitation. The importance of this dew-pond to the settlement is obvious from the fact that it was thus guarded, and that, in the event of any alarm, assistance could be summoned from the settlement above. It will be observed that we have now adduced a threefold evidence in favour of the view that some of the dew-ponds are contemporary with the neolithic earthworks:—

(*a*) Certain dew-ponds are fortified in a manner similar to the neolithic earthworks of the settlements.

(*b*) Some of the neolithic earthworks around the settlements are constructed in such a manner as to provide communication, to and fro, between them and certain dew-ponds.

(*c*) That a dwelling similar to the dwellings within the Ring is not infrequently found in close proximity to a dew-pond.

In our opinion this evidence is conclusive as to the neolithic construction of some of the dew-ponds.

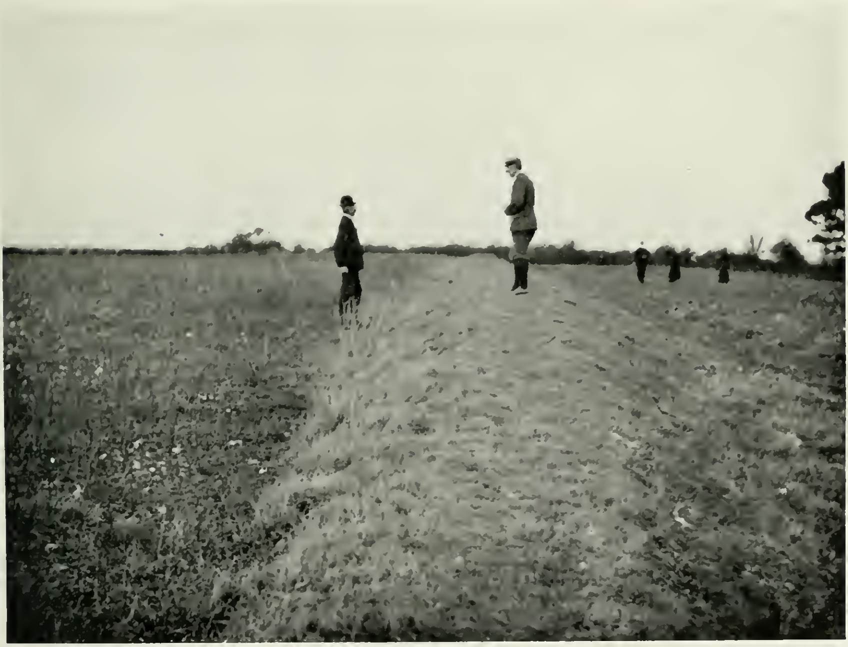
Continuing the circuit of the wall, we find numerous traces of habitations in a contracted area in the north-western part of the region enclosed by the Ring. These habitations were probably occupied by the herdsmen and their women and children.

From this portion of the settlement there is a narrow footpath, in places deeply worn into the ground, also leading directly to the dew-pond. We know of only one instance of a dew-pond being found within any of these ringed settlements; and we suggest that the explanation is to be found in the fact that, on the inside of the Ring, the animals were so closely packed that their trampling feet would have rendered any pond useless.

Lying to the north of Cissbury Ring, at a distance of about four miles, is Chanctonbury Ring, situated at an elevation of over 800 feet above the level of the sea, and assailable only on its southern side. It is a landmark in every direction, and the views from its summit are amongst the widest in England.

When walking from one Ring to the other we discovered a low embankment, and as this did not present any of the characteristics of modern work, we determined to trace its course. We found that it enclosed an area roughly circular, with a circumference of about three or four miles.

We were able with absolute certainty to trace the embankment throughout its entire length, with the exception of some few hundreds of yards on the rising ground in the west. On this sloping ground the rains of thousands of years had washed it away.



IX.—THE LOW EMBANKMENT ENCLOSING AN AREA OF LAND BETWEEN CISSBURY AND CHANCTONBURY RINGS.

The area contained within this embankment was probably devoted to the production of hay or used as a grazing ground, and had been protected not only by the mound but by guard-houses, of which we found the traces at intervals in the northern section of the structure.

Leaving this enclosure behind us, and continuing in the direction of Chanctonbury Ring, we observed yet further earthworks.

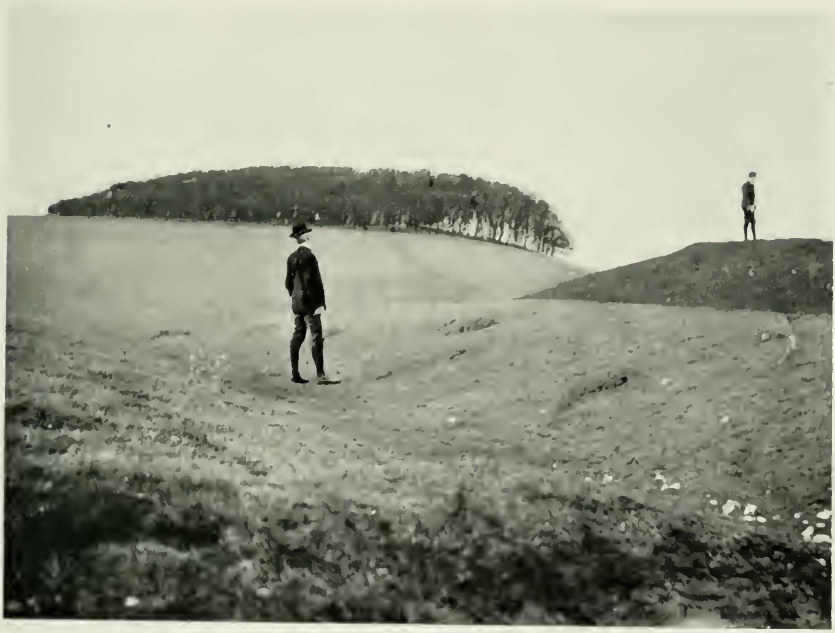
These consisted in the first place of a low embankment running directly towards Chanctonbury Ring; this embankment continued until a steep declivity on our right had disappeared and we reached comparatively flat and open country.

The low embankment at the side of the steep declivity here appeared to define the limit of the contained area around the settlement. The declivity itself would be useless either for grazing ground or cultivation; but it here formed a natural defensive boundary to the settlement.

From this point, where the low embankment surmounts the natural declivity of the land, a long and gentle slope, gradually becoming steeper, brings us to the bluff lying to the south-east of Chanctonbury Ring, from which it is less than a quarter of a mile distant. On this bluff may be found perhaps the most interesting of all the objects we are describing.

As one ascends the bluff the skyline reveals the fact that it is crowned by fortifications on a fairly large scale. It is not, however, until one is actually upon it that one perceives the purpose of these earthworks. They are then seen, on the aspect facing the steep side of the bluff, to surround a dew-pond. They consist of a deep trench cut in the face of the hill, part of the thrown-up earth from which forms one side of the basin, while the remainder forms two parallel protective mounds.

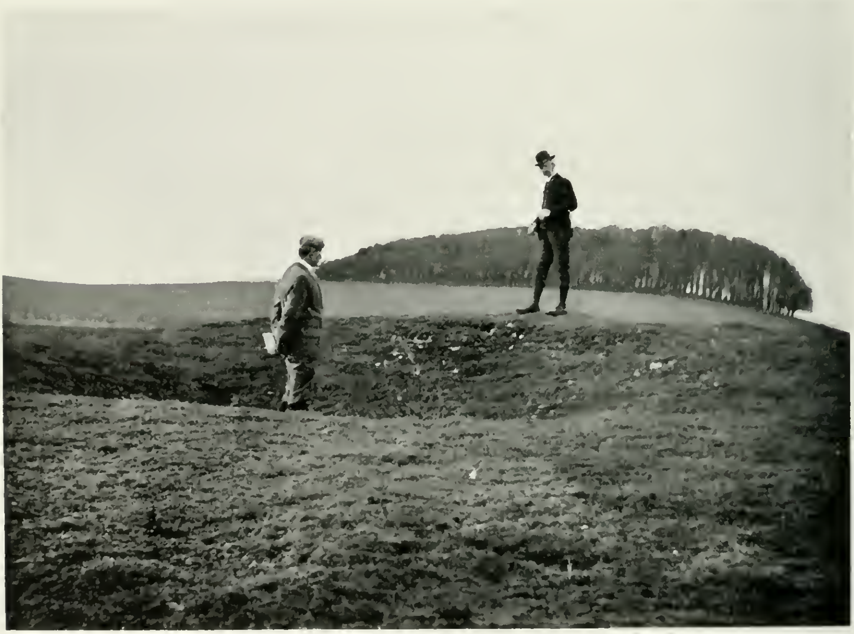
This trench and mound are carried round the exposed side of the pond, farthest away from the Ring, and extend in each direction for some distance in such a manner as to furnish cover along the steepest part of the ascent. The space between the dew-pond and the Ring is entirely open and unprotected. Not only do these earthworks closely surround one side of the pond, but, as they extend to the east, they enclose the remains of a dwelling or watch-house.



X.—FORTIFICATIONS SURROUNDING DEW-POND NEAR CHANCTONBURY RING.

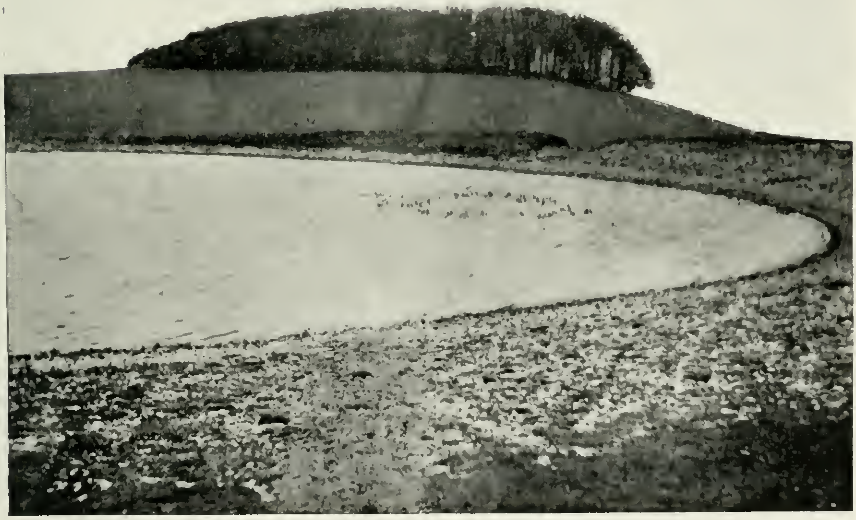
The very steep side of the down on this, the north-east aspect, was probably covered by primeval forest, the natural resort of wild animals.

It is evident that this dew-pond furnished the water supply of the inhabitants of Chanctonbury Ring. In the event of its destruction, the inhabitants of the Ring would have been temporarily reduced to the utmost straits, and in this fact one may find an explanation of the amount of labour expended not only in its construction, but on its protection. This dew-pond,



XI.—REMAINS OF WATCH HOUSE ENCLOSED WITHIN THE EARTHWORKS DEFENDING THE DEW-POND CLOSE TO CHANCTONBURY RING.

of sixty or seventy feet in diameter, necessarily an elaborate structure, built, as we have pointed out, before the age of any metal implement, was a work of incredible labour, comparable in amount to that expended in building the Rings themselves. It is worthy of note that, although it cannot be perceived from below, it is well in view from Chanctonbury Ring itself. But a short distance lies between the pond and the Ring; and as one traverses this intermediate space, a fresh element of interest may be discerned by the



XII.—VIEW OF DEW-POND NEAR CHANCTONBURY RING. TREES COVERING CHANCTONBURY RING SEEN IN THE DISTANCE.

experienced eye. As the ground steeply rises to the Ring, the remains of about half-a-dozen circular mounds may be traced, lying immediately outside the Ring on the eastern slope. These tumuli are of present human interest in that they have been placed in that spot upon which the rays of the rising sun will first strike. There the sleepers await the Dawn of the New Day.

The Ring surrounds the apex of one of the highest downs in the South of England. It is the most conspicuous position in a whole system of settlements on the South Downs. It projects like a promontory from the South Downs into the Sussex plain below, and the apex of this headland stands over 800 feet above the level of the sea.

At present it is covered by a large clump of trees, and the mound is raised just within their margin.

The view from this point is one of the most magnificent and extensive in England. On a clear day one may perceive in the south-west the outlines of the Isle of Wight, and in the south-east the position of Brighton may be discerned. Northwards the great plain of Sussex is laid out as on a map. From this plain the down rises almost precipitously to the summit. The mound of the Ring itself is perhaps 12 feet high, and makes a complete circuit as a crown upon the head of the down.

The trees within this Ring have served a double purpose—the fallen leaves have formed a mould which hides the remains of any habitation or other sign of primeval occupation; but their roots have gradually brought to the surface remains of a later occupation. We found Roman roof tiles in such profusion that it would have been an easy matter to fill a barrow with them.

XIII.—VIEW OF PART OF THE MOUND OF CHANCTONBURY RING.

The Roman, like his primeval predecessor, had been attracted to this wonderful spot; and the remains of the moulded roof tiles suggest the former existence of a comparatively permanent structure, but we could find no definite evidence of its purpose or character.

This unique spot, which was of such vital importance to the existence of primeval man, and where he laid his dead to be greeted by the rising sun, may have been but a pleasure resort to the luxurious Roman, and to-day it is scarcely more than a name to the inhabitants of the district.

Neolithic man approached his settlement by passing over the whole range of the Downs, and from his exalted position he could look down upon Cissbury Ring some miles distant, where his herdsmen were guarding his beasts.

Descending the comparatively precipitous northern slope is a neolithic road which is no mere gully or cattle-way. This is a broad, smooth route, cut in the side of the down, designed to take advantage of the easiest gradients leading from the Ring.

Standing upon the upper parts of this roadway and looking out upon the broad plain below, one sees the white straight line of a Roman road drawn through the country as though with a ruler. This line terminates at a distance of some miles from the foot of the Downs; but, if it is projected, it will be found to meet the spot at which the road from the summit enters the plain.

The antiquity of the road upon the down is attested by a tree growing on the cutting formed to construct it. This tree must have taken root since the road was constructed, otherwise it would not be found on the surface of a cutting exposed during the period of construction. Its trunk, though short, is of great girth, hollow and gnarled, covered by great bosses and excrescences, and with ferns growing in the angles of the boughs; its age must be measured by centuries.

At the present time the end of this road is lost in a chalk-pit at the bottom, but from the fields below its course may be clearly discerned.

II

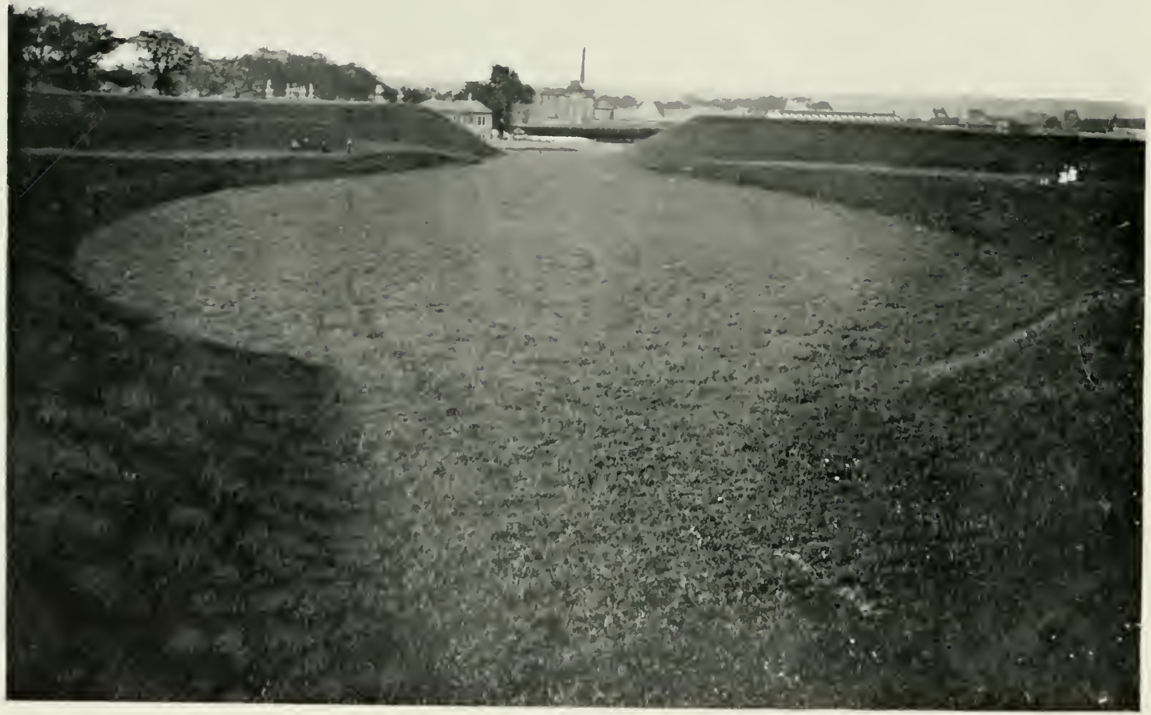
MAUMBURY RINGS AND MAIDEN CASTLE

Maumbury Rings

This earthwork, situated near the railway stations on the outskirts of Dorchester, appears to us to differ entirely in purpose from the ordinary neolithic hill settlements with which it is certainly contemporary; and in spite of the fact that it has no connection with the dew-ponds which form the main subject-matter of this pamphlet, we venture to draw attention to some of its peculiarities.

It is universally, and, in our opinion, incorrectly, referred to as a Roman amphitheatre. The structure possesses, not the characteristics of Roman work, but those which distinguish the labour of neolithic man, the mounds which we are about to describe being constructed in the same manner, and of the same materials, as the embankments of the neolithic hill settlements.

The construction of simple earthworks is anterior to the use of the shaped stones which were erected on Salisbury Plain, and we may safely assume that at the period when Stonehenge was set up the worship of the sun in this country was already of considerable antiquity.



XIV.—VIEW THROUGH LONG AXIS OF MAUMBURY RINGS.

There is, therefore, a probability that the first Solar Temples of prehistoric man were built in a manner similar to the hill settlements.

At Maumbury Rings we find an oval structure, the interior measurements of which are 218 feet by 163 feet. It is an earthen embankment approximately 30 feet high. At the north-east this embankment is cleft, and an opening some 30 feet wide at the bottom occurs at this point, which is at one end of the long axis of the oval. At the other end of this axis the upper portion of the embankment was not constructed.

The orientation of the structure was carefully determined by us, and found to coincide accurately with that of Stonehenge.

The opening in the embankment allows the vivifying rays of the rising sun to enter, and, passing along the long axis of the structure, to strike upon the rising floor at the opposite end. The impression left on our minds was that in the earthwork before us we probably had one of the earliest temples erected for the worship of the sun.

During our examination we remarked upon the omission of any stone analogous to the Sun Stone, or Helstone, over which the midsummer sun rises at Stonehenge. We subsequently found in "The History and Antiquities of the County of Dorset," by John Hutchins, M.A., 1868, vol. ii. p. 795, that —

> "Roger Gale derived the name Maumbury from Maen, a great stone which lay at the entrance when he saw it in 1719."—(MS. letter.)

By another authority we have found it stated that a large stone formerly existed at the entrance; but as this was found to be an obstacle to the cultivation of the land, a hole was dug and the stone was deposited in it. A subsequent search has failed to discover it.

Seeing that both these authorities make reference to the stone at the entrance without any suspicion as to its solar significance, we feel no doubt as to its previous existence.

MAIDEN CASTLE

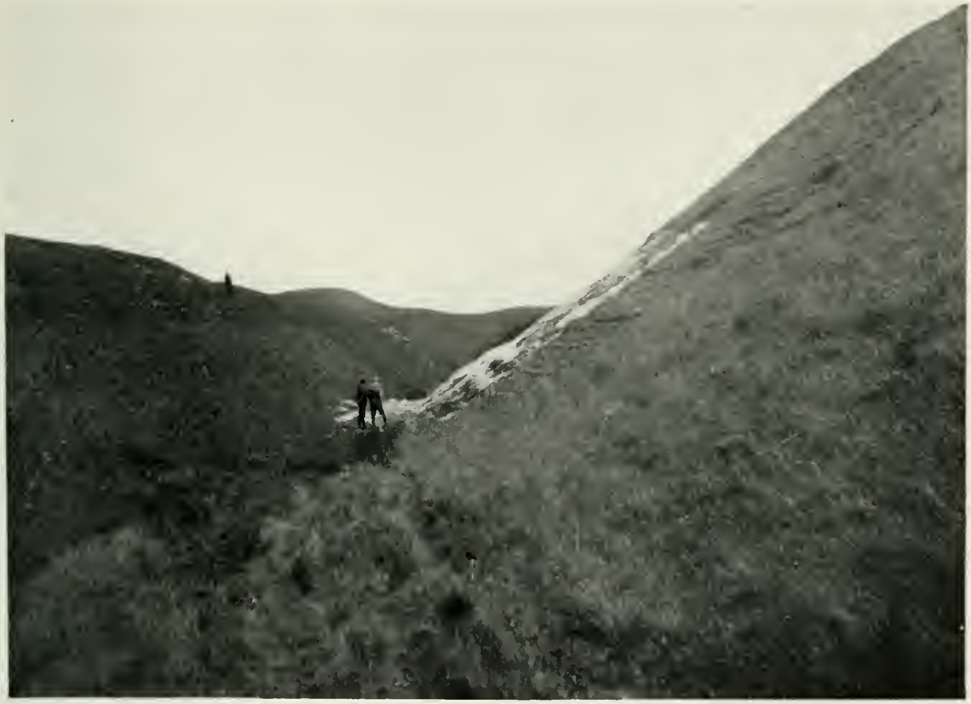
Almost due south-west, at a distance of about two miles from Dorchester, stands Maiden Castle.

Its outlines may be seen from the Roman road leading from Dorchester to Weymouth, but they give little indication of the awe-inspiring immensity of the works. It lies at an elevation of 430 feet above the sea, surrounding the summit of one of the largest downs in the neighbourhood.

The area within the Rings is from 40 to 50 acres in extent, and the circumference is about one mile.

To this day it would be a matter of very considerable difficulty to reach the contained plateau except by one of the regular entrances. It is most conveniently approached by the eastern entrance.

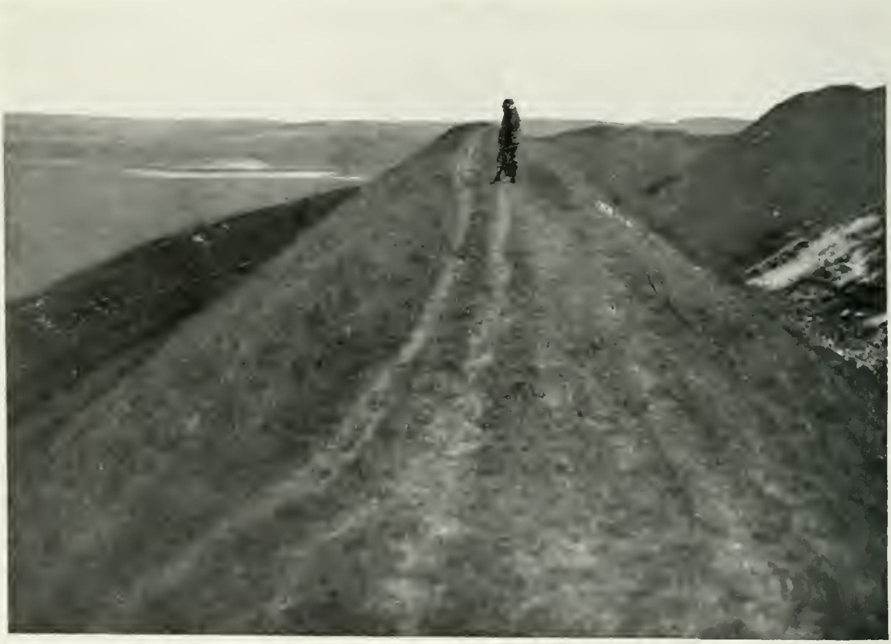
The complexity of the maze of stupendous earthworks by which the entrance is guarded baffles description. It suffices to say that an approaching enemy, furnished only with such weapons as were known to primeval man, must have found the place impregnable. To this day it produces a sensation of bewilderment, for every inch of its lengthy and tortuous course is dominated by a succession of spurs and embankments on either side, so arranged that tier above tier of the defending forces would be continuously encountered.



XV.—VIEW IN ONE OF THE DITCHES SURROUNDING MAIDEN CASTLE.

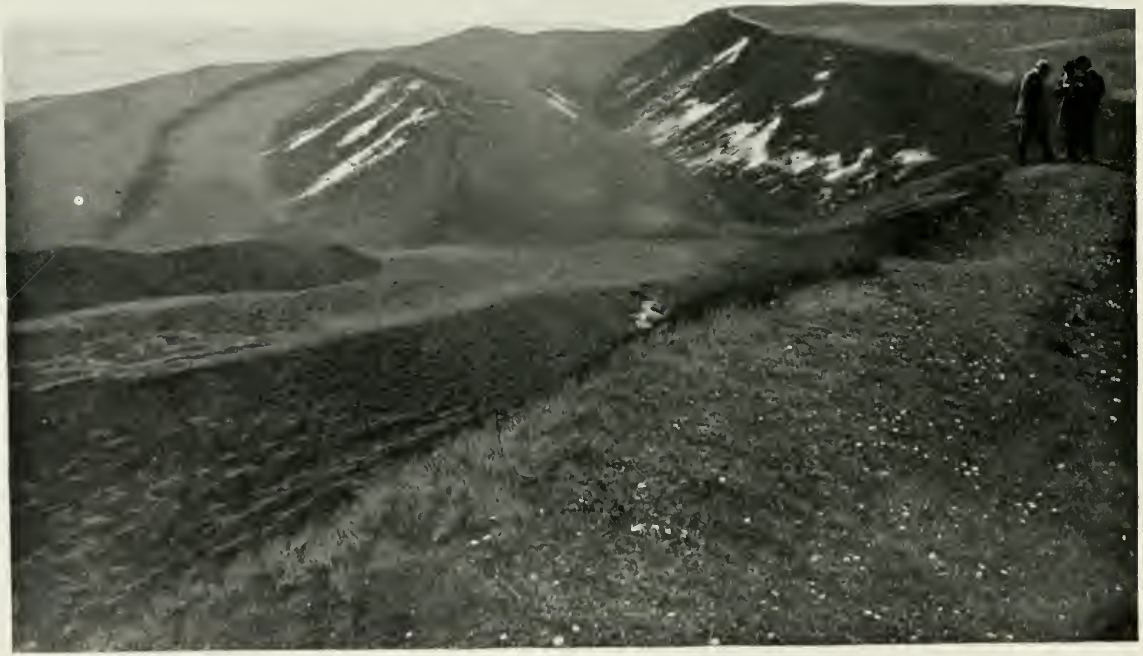
An attempt to attack the settlement from any other point than the entrance is not less obviously doomed to failure.

An approaching enemy would have to scale great embankments, even now 50 to 60 feet in height, with steeply sloping sides, placed one behind another to the number of three or more. Each ridge would doubtless be defended by men to whom, owing to the nature of their position, defeat or retreat involved certain death.



XVI.—VIEW FROM SUMMIT OF ONE OF THE SURROUNDING EMBANKMENTS AT MAIDEN CASTLE.

As may be seen in the illustration (XVII.), wherein the subsidence at one point in the Rings round Maiden Castle is depicted, some of the embankments have



XVII.—VIEW SHOWING SUBSIDENCE AT ONE POINT IN THE RINGS SURROUNDING MAIDEN CASTLE AND THE LEVEL PLATFORMS BEHIND THE RIDGE OF THE EMBANKMENTS.

level platforms behind them, beyond which again is the deep trench in front of the next embankment. On this level platform the reserves were probably waiting to take their place in the fighting line, when those upon the crest had fallen.

The central plateau is kidney-shaped, and is divided into two roughly equal parts by a transverse scarp of artificial construction. The eastern division, which has two complicated double approaches in close proximity to each other, is the first to be reached from the Roman road, and stands at a higher level than the western. It was probably occupied exclusively by the human inhabitants; the western, into which the cattle-ways enter, being devoted to the herds. We shall, however, presently bring forward evidence that only such a portion of the herds was kept at Maiden Castle as would suffice for the needs of the community during the winter.

A dew-pond is here found within the Rings. This is unusual, but a reason for this is to be found in the fact that outside the Rings a supply of running water was at hand, in this respect presenting a contrast to Chanctonbury-cum-Cissbury. The traces of many dew-ponds may be found outside the Ring in positions removed from running water.

There is no evidence of the means by which this pond was preserved from the trampling of the herds, and being within the Rings it is, naturally, unfortified. It is near the dividing central scarp, and is thus conveniently placed to supply the needs both of the human community and of the animals.

Leading down from the eastern, and we presume the cattle quarters, we find, as at Cissbury, two cattle-ways. The one by which the animals descended takes a northerly course and leads directly to the undulating land suitable for grazing grounds. The ascending cattle-way takes an opposite direction, and is marked by the remains of a dwelling-house at the bottom. The length of the ascending cattle-way is a quarter

XVIII.—VIEW OF DEW-POND AND DIVIDING SCARP WITHIN MAIDEN CASTLE.

of a mile or more, and winds in and out between the great embankments in such a manner as always to maintain an easy gradient. Here, as at Cissbury, may be seen what we have presumed to call a Tally-house at the point of entrance of the cattle-way into the settlement.

The route of these cattle-ways through the embankments is not less complicated or less capable of defence than the eastern entrance to which reference has already been made. The ascending cattle-way, obviously a position of danger at the time when the herds are being driven home, winds between no less than seven formidable embankments.

On the southern side of the eastern section, a deep hole may be seen in the ground within the Castle; and beneath a stone lintel in the outermost Ring there appears to be the entrance to a subterranean passage. As the hole and the passage are nearly opposite each other, it would appear that they were connected. Local tradition has it that beneath this stone lintel was found a stairway, and that after so much had been discovered, the staircase was filled up with earth. It is, at any rate, now so nearly blocked that it is impossible to enter. The evidence of apparent subsidence in all the Rings has been along an imaginary line between the above-mentioned large hole in the central plateau, and the entrance to the passage which is found beneath the lintel of limestone. This is distinctly corroborative of the former existence of a subterranean passage leading from the central plateau into the outermost trench. The possible purposes of such a passage are several. This section of the embankments, being the least protected by works external to the Rings, is the only one which was likely to suffer a surprise, and which could not be quickly manned by the defender. A passage such as is here indicated would enable this to be done with expedition.

If the reader will divest his mind of modern needs, and realise only the primal necessities of prehistoric man, it will be evident that they may be summed up very simply. The preservation of the community, through which alone he could live, was his only care.

The dangers to the community would be famine, or destruction by human or animal enemies. To guard against famine it would be necessary to maintain and protect great herds of animals. To maintain the animals it would be necessary to secure, and to be able to defend, great grazing grounds for the summer; and it would be also necessary to provide fodder for the winter months.

The conditions we have described conform to the antecedent necessities of his bodily welfare, and we believe that this conformity may be traced very much further than has been hitherto attempted. We now proceed to suggest what were the arrangements made by neolithic man for miles around his settlement.

Our examination was conducted in May 1904, when a rich profusion of wild flowers was beautiful in the sunshine. The irregular distribution of the crop of daisies had early attracted our attention. We observed that, for some inexplicable reason, they carpeted the prehistoric roadways which are carved for miles on the face of the Downs. At the foot of the descending cattle-way we were both struck by the sight of a well-marked almost complete circle of daisies, as absolutely true as though it had been described by a pair of compasses. The only omitted part was a segment in the north-east. The circle was not only apparent on the spot, but its outline was clearly indicated when looking down from the ramparts at a point more than a quarter of a mile away. The diameter of the ring of daisies, which we independently paced in different directions, was 46 yards, and the band of daisies itself, though it varied considerably in width, was about two yards wide. The inner edge of the band was, however, always well defined, except, as we have said, in the north-east. There, for twenty yards or so, the circle was broken.

Slight indications of earthworks were found in the immediate neighbourhood of the circle; and we may conjecture that the ring of daisies, plants which usually flourish best on hard ground, still traces for us the outline of a former work.

An embankment runs straight in a northerly direction from the north-east corner of the Castle, and to this day marks a parish boundary. To the north and east beyond its termination we traced for several miles a succession of embankments which in all cases had a definitely ascertainable purpose. We found that these earthworks sometimes took the form of a platform with a steep declivity, sometimes that of trench and embankment, and that they sometimes were merely a cutting in the ground. Their position indicates that they offered a means of defending the herds from the attacks of animals. They are invariably in a position to protect the heights from the denizens of the marshy or wooded regions below; and wherever, owing to the configuration of the ground, there is the appearance of danger, the necessary earthworks will be found to protect the heights from an attack from below. There is no limit, that we could discover, to the area that has been thus treated. When the eye has once become accustomed to the system of defence adopted by primeval man to protect his herds, one can predict from a distance with much certainty what will be found on a closer inspection of the land. Between Maiden Castle and Poundbury Camp a network of such defences is continuous. If one follows the low-lying land between the two, one may see these earthworks on the rising ground on either hand. With this object in view, it becomes extremely interesting to follow the course of any of the streams in the neighbourhood.

The chief occupation of neolithic man was to protect the herds on which his life depended. A further evidence of this necessity may be seen in the carefully constructed roadways he made for them. Just beyond the termination of the embanked parish boundary, above the invariable defences along the margin of the lower ground, may be found the beginning of a road at a point about midway between Maiden Castle and Poundbury Camp, and on the eastern side of the valley. If we now follow this roadway, which begins on the east side of Fordington Down, we find that it ultimately leads to Poundbury Camp.

At more than one point we find diagonal cattle-ways leading down to and up from the low-lying valley. These cattle-ways at some former period led down to the water at the bottom of the valley. Nearing Poundbury Camp the road is cut in the steep bank of the river Frome, and a well-marked example may be seen here. Diagonally down this bank, in the least precipitous part, cattle-ways meet at an angle at the bottom. Obviously, one was the descending cattle-way, and the other the ascending. At the point where they meet at the bottom the whole surface of the ground has been disturbed by mounds and excavations. The river has now receded from these works, and is at a lower level—a fact which indicates the antiquity of the structures in question ; and at these points it would be an easy matter to determine the difference of water level since the cuttings were made.

Continuing our walk along this road from which the diagonal cattle-ways descend, and observing in passing the profusion of daisies which whiten its surface, we see in the distance the great mounds of Poundbury Camp.

The river was the natural defence and boundary of the settlement on the north, and Poundbury Camp was an outlying defence and place of assembly for the bulk of the herds.

XIX.—VIEW OF NEOLITHIC ROAD LEADING FROM MAIDEN CASTLE TO POUNDBURY CAMP.

(Note that the surface is whitened by daisies.)

This roadway does not lead into Poundbury Camp at its nearest point, but is continued between the embankments and the top of the river bank. At a point on the east face of the Camp the embankments cease, and here the cattle entered the enclosure.

It is interesting to notice that at this, possibly the chief location of the herds, there are, on the three exposed faces of the Camp, just outside the embankment, and continuous with its base, extensive platforms with a declivity beyond.

XX.—VIEW OF THE SAME ROADWAY BUT LOOKING IN THE OPPOSITE DIRECTION.

Poundbury Camp is, roughly, rectangular, and one peculiarity of this settlement is to be found in the tendency to the adoption of the rectangular form in place of the circle. Thus we find that the best-preserved tumulus in the neighbourhood, known as Clandon Barrow, is in fact a pyramid. The only difference from its Egyptian parallel is in point of size and material. Its faces are duly oriented to the four points of the compass.

Neolithic man, having made most elaborate defences against sustained attack, was also very careful to guard against unexpected approach. From the situation of his settlements he was able to command extensive views over the surrounding country; but, if any down in close proximity to his settlement hid any portion of the country from his immediate observation, he took the precaution to put an outlook station on such obstructing down. At the Maiden Castle there is such a down, known as Hog Hill; and on the summit there is an artificially raised station from which a guard could conveniently signal to the occupiers of the settlement, and give warning of the approach of an enemy. This outlook station is not only close to Maiden Castle, but the great embankments of Poundbury, which are themselves hidden from Maiden Castle, may be seen from it in the distance, and it thus furnished a link between the two.

Every conceivable precaution for the welfare and protection of the community appears to have been most carefully considered and executed.

With a sympathetic understanding of primeval man's needs, it is still easy to find the remains of his works. It is, however, a matter of extreme regret to find that, under the ravages of the burrowing rabbits, the great embankments are gradually crumbling away.

The farmer's plough is also as surely working destruction to these monuments of neolithic man. Year by year the plough shears off a foot or more from the base of the great tumuli, and it is sad to see these sepulchres being gradually levelled. The dew-ponds, too, are becoming filled up, and the plough in more than one case has been driven through these ancient water-supplies. Soon they will be levelled out of recognition, and if these ravages are allowed to continue without hindrance it will be impossible even to trace their remains.

Not only are the great embankments being gradually allowed to crumble away by the inroads of thousands of rabbits, and the dew-ponds and tumuli levelled by the plough, but the chain of evidence is now, for many many acres at a stretch, already entirely obliterated. The defences and trenches are as entirely erased by the plough as though they had never existed.

To the unsympathetic eye these banks and trenches have no particular meaning, and are only regarded by the farmer as obstructions which are to be got rid of as soon as possible, to enable him to bring the land under cultivation.

In this utilitarian age it is perhaps useless for us to raise a protest; but we cannot resist doing so when we see the ploughshare cutting out these relics of man's earliest works in our country. For thousands of years they have existed; and yet in the course of a few generations only the distorted remains of the gigantic embankments will be visible, and it will be impossible to trace, as we have attempted at the Maiden Castle and Poundbury Camp, the connection between them.

Maumbury Rings until but a few years ago had its comparatively small floor ploughed up, in order that a handful of corn might be raised upon the ground.

We have already pointed out that the great stone which formerly stood at the entrance of the Ring, and the shape and site of which would be of so much interest, has been removed and buried.

Perhaps there may have been centuries of labour expended in the construction of the great embankments around Maiden Castle. It is now impossible to gauge what height they may have reached; but those great chalk embankments, glaring in their whiteness where they crowned the Downs, must have been formidable fortresses against all possible foes.

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"*The month which we now call* January *our Saxon ancestors called* wolf-monat, *to wit*, wolf-moneth, *because people are wont always in that month to be in more danger to be devoured of wolves, than in any season else of the year; for that, through the extremity of cold and snow, those ravenous creatures could not find of other beasts sufficient to feed upon.*"

Richard Verstegan,
"Restitution of Decayed Intelligence in
Antiquities, 1673."

III

CATTLE-TRACKS*

One of the hereditary instincts of gregarious animals is to follow in the footsteps of their recognised leader; and this habit among cattle, if acted on uninterruptedly for a sufficient period, will cause certain well-marked routes to be formed on the land.

The tendency of rabbits to congregate together is well known, and those who have examined the hill settlements of early man must have observed the rabbit runs on the sides of the embankments. Sometimes the sides are too steep for the rabbits to trample down a headlong course straight up and down, and they then strike a perfectly horizontal one. These parallel runs in time become trodden around the steep sides, and are formed with such perfect regularity that a child could safely walk up the sides of the steepest embankment as though mounting a broad and even staircase.

On hillsides where sheep have been allowed to roam for very long periods, we may observe that regular beaten courses have been formed by their feet. And in the vast plain of Central Canada the tracks of the now extinct herds of buffalo may be seen stretching from horizon to horizon; these may be traced from one watering place to another on the route of their annual migrations.

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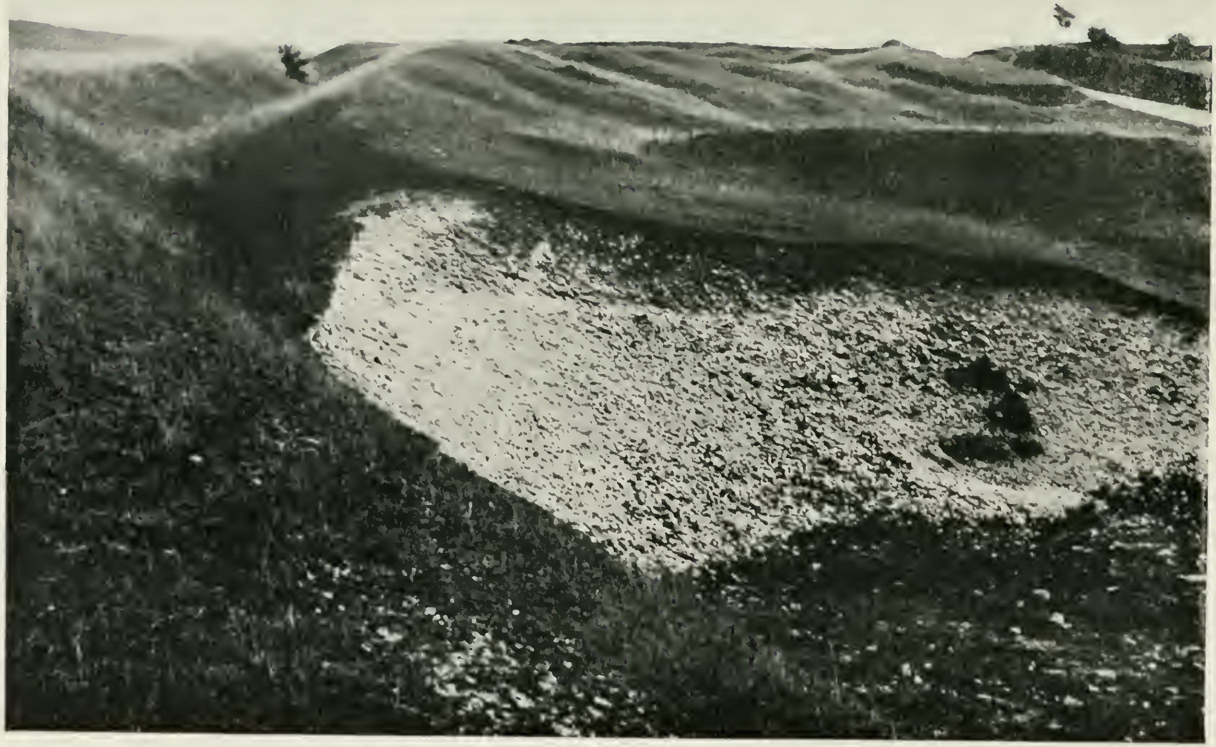
* We use the word "cattle-track" to indicate the routes formed merely by the treading of herds, in contradistinction to the word "cattle-ways," which we have adopted for roads formed by man for the use of his cattle.

This hereditary instinct of herding animals to follow exactly in the footsteps of their leaders is well recognised; and, on Salisbury Plain and its neighbourhood, the cattle-tracks thus formed some thousands of years ago may be seen to this day deeply scored in the land.

The cattle-tracks to which we shall presently refer appeal to us perhaps with especial force, as showing how century after century the husbandry of the race occupying the encampments was continued without change or interruption.

On the river Avon is the small village of Durnford, about six miles north of Salisbury, and on the crown of the hill on the east side of Durnford is a hill settlement known as "Ogbury Camp." A comparatively new road has been constructed about a quarter of a mile to the south-west of the Camp; and on the east side of this road it will be seen that the land has been deeply scored by trenches from two to three feet deep, and that one trench is perhaps as much as ten feet deep.

There is obviously no preconceived design in the laying out of these tracks. They commence just below the brow of the hill, and may be traced from thence descending toward the river Avon in the valley



XXI.—VIEW SHOWING CATTLE-TRACKS NEAR OGBURY CAMP, WITH QUARRY IN THE FOREGROUND.

below. The brow of the hill, which is here defined by a cutting for a lane, is under cultivation, and the tracks in consequence cannot be traced, nor can they be traced in the valley below, for the land is here again under cultivation; but in the intermediate space between the brow and the valley the tracks are well defined.

At some points in their course perhaps two or more branch into each other and are then continued as one. The lines of these trenches are in fact just such as might be taken by herds of cattle following their leader from the high lands to the river below. They are, we believe, cattle-tracks.

A good section of the land has been exposed, where a quarry has been formed cutting through the lines of the cattle-tracks. From this section it may be seen that the cattle-tracks form trench-like depressions in the land, cutting through the natural stratification.

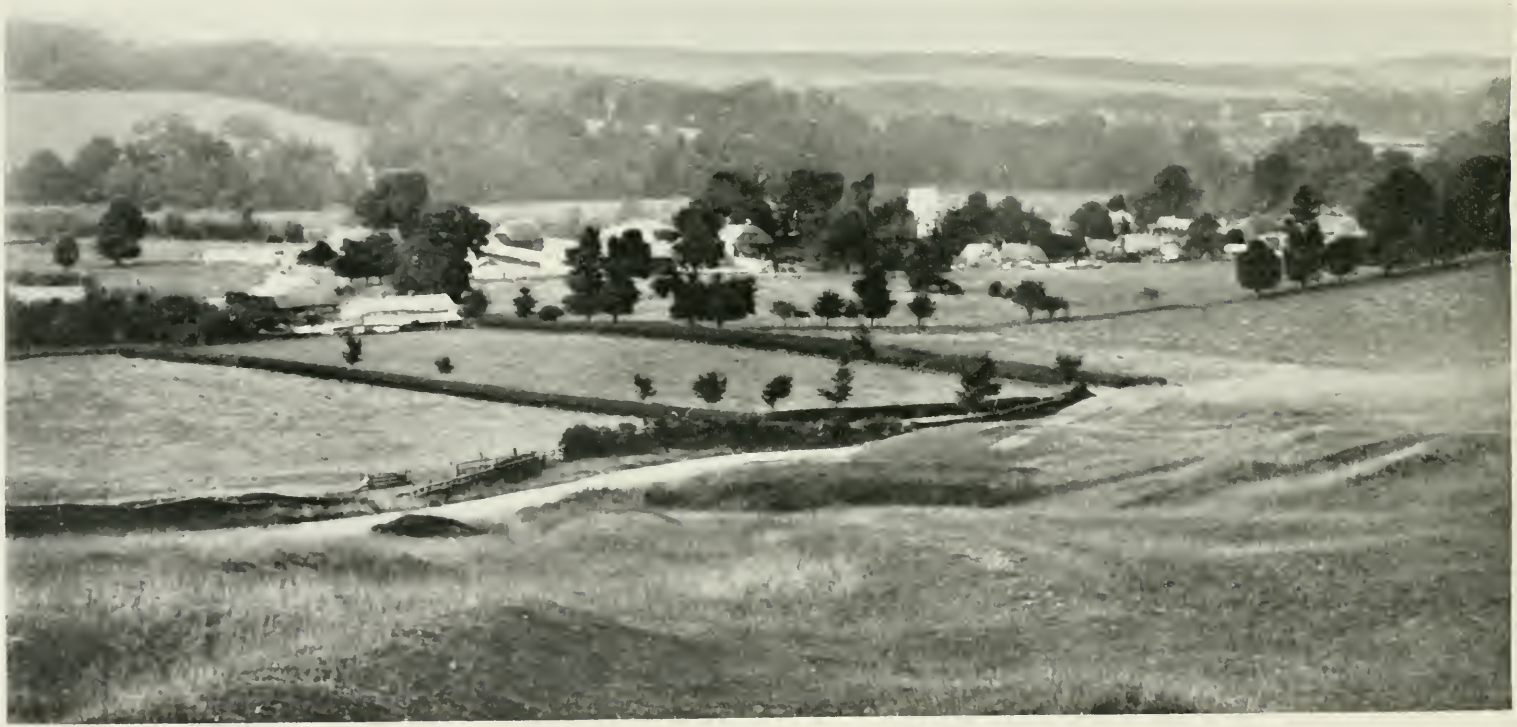
In support of the theory that these trenches are worn down from the surface of the land, it is an important point to observe that the embankments which rise between them are not formed of made-up earth. If man had dug out these trenches he would probably have thrown up the excavated earth, thus forming mounds between the trenches; but that this is clearly not the case may be seen in the exposed section of the land where the quarry has been made.

The subsoil is chalk, and the depth of these cattle-tracks indicates that the cattle had been habitually, and probably for centuries, trampling the same roads. Situated as they are close to Ogbury Camp, it seems apparent to us that this particular hill settlement must have been in constant occupation, and that it was not simply, as is often assumed to have been the case with hill settlements in general, a place of refuge in time of danger.

We have shown at Cissbury that man had constructed roadways for his cattle leading up to, and down from, the settlement to the dew-pond below; and we have also shown by this example, and by the entrenchments around the dew-pond at Chanctonbury, which are contemporary with the rest of the earthworks, that the art of the construction of dew-ponds was known to neolithic man. Here on the cattle-tracks close to Ogbury Camp we will show further evidence to the same effect.

Undoubtedly it was in the wooded and marshy lands of the valleys that the cattle of neolithic man were most exposed to danger, for it would be here that the wolves would be likely to roam and probably to collect near the habitual watering places of the cattle. In winter time, if food were scarce, the cattle would be especially exposed to danger; and early man, armed only with his implements of flint, would probably have been almost powerless to protect his herds.

So, as it appears to us, he conceived the idea at Ogbury that it would be wise to construct a dew-pond



XXII.—VIEW SHOWING THE DEW-POND CONSTRUCTED ON THE LINE OF THE CATTLE-TRACKS NEAR OGBURY CAMP.

on the high land in order to supply his herds with water, and thus to avoid exposing them to the attendant risks of the river below.

It was in fact no easy problem which presented itself to him. On the one hand, if his cattle continued to go down to the river to get water, there was the risk of the wolves; and yet, on the other hand, how could he induce his herds to leave their well-trodden roads and drink from the dew-pond he proposed to construct?

In connection with this point it is interesting to find that a tradition of the old danger from wolves is still handed on among the so-called wild cattle of Chillingham. The cows of this herd to the present day retain the habit of concealing their calves.

These early herdsmen were probably keenly alive to the natural instincts of their cattle, and the hereditary instincts of the herds to follow their leader would probably have been more pronounced in those days than it is now, after the lapse of at least four thousand years of breeding under man's fostering care. The men must have been aware that it would be no easy matter to induce the leaders of the cattle to depart from their well-trodden roads in order to drink the insipid water on the shadeless banks of a dew-pond when there was the cool and refreshing river flowing in the shade of the trees in the valley below.

The dew-pond neolithic man here constructed for his herds fairly and squarely met the difficulty. Right in the middle of the cattle-tracks he dug it. It apparently is so designed as to intercept all the cattle-ways except one, the obvious intention being to leave the cattle no alternative but to get their water at the dew-pond, or to pass by along the one way which we think was purposely left intact.

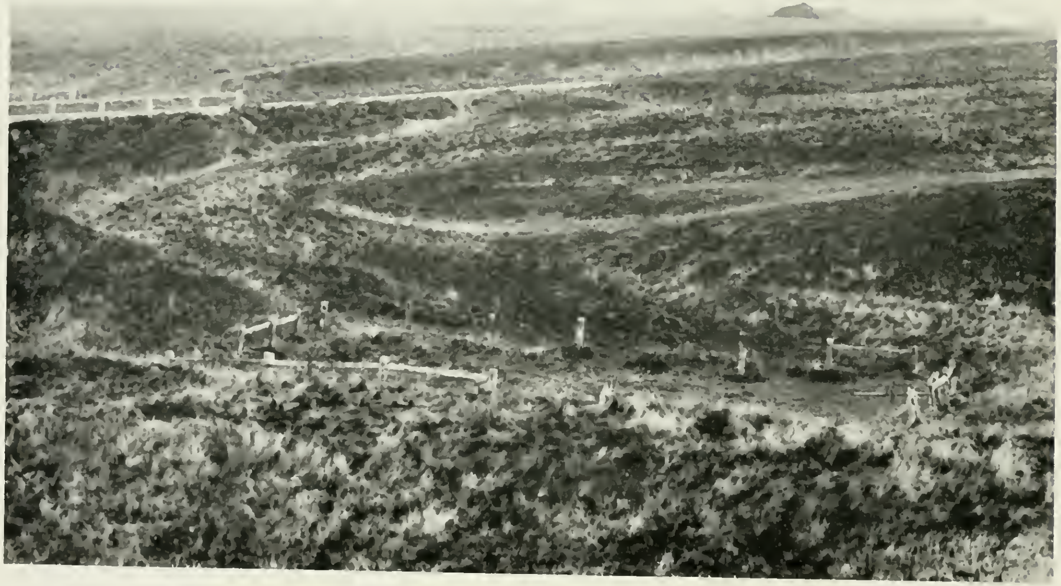
This one cattle-track which runs just outside the dew-pond is trodden down to a far greater depth than any of the others. We think that this particular way was purposely left for the cattle, so that it might be traversed by them while the dew-pond was being constructed.

It was probably anticipated that the peace of mind of the cattle would not be unduly disturbed if at all events one of their traditional routes to the river were left untouched.

All this is rather hypothetical ; but if we have read aright the difficulty which presented itself to early man and the means he took to get over it, we cannot help admiring his ingenuity, and we now regret having to record that apparently this effort on his part to preserve his herds was a failure.

It was a rash effort on his part to attempt to construct a dew-pond on a peculiarly unsuitable piece of land. Alongside of these trenches is the even and unbroken gentle slope of the hill ; here he could have built his dew-pond with far less labour and with far greater probability of success.

The dew-pond in the midst of the cattle-tracks we fear never held water. The old tracks run sharply



XXIII.—VIEW OF CATTLE-TRACKS NEAR ROAD LEADING FROM AMESBURY TO STONEHENGE CONVERGING ON DEW-POND BY RAILINGS IN FOREGROUND.

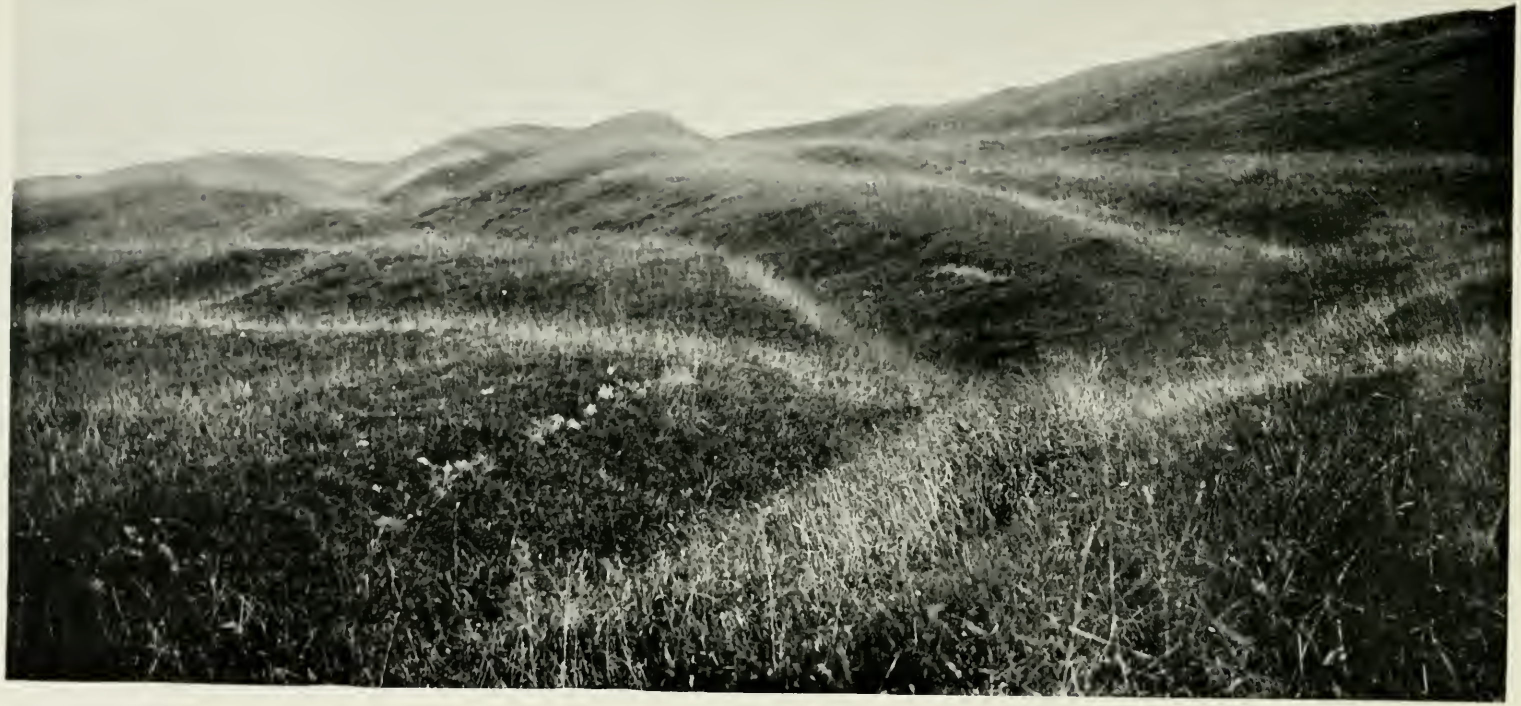
down to it, and the same old tracks reappear again beyond it.

There is nothing to indicate that the dew-pond had been constantly used for watering the herds, and much which tends to show the reverse. Perhaps it is possible that there may have been some slight trickle of water down the trenches during heavy rain which would have moistened the layer of reeds or straw below the clay, in which case, as we have before shown, the thermodynamics of the dew-pond would have been upset. But there is yet further evidence of the failure of the dew-pond as a means of supplying the herds with water. The depth of the cattle-tracks, intercepted by the construction of the dew-pond, does not perhaps exceed three feet, whereas the depth of the solitary cattle-track which runs just outside the boundary of the dew-pond is about ten feet. From this fact it seems clear to us that this particular cattle-track had to be used by the cattle on their way to the river, not only while the dew-pond was being constructed, but for very many years afterwards. The other cattle-tracks had been rendered impassable by the impeding dew-pond. It was not the dry crust at the bottom of the dew-pond which was impassable; but it was the bank at the side of the dew-pond towards the valley which must have been too steep for the cattle to descend. So the cattle continued to trample still deeper the one way which had been left to them.

Ogbury Camp is somewhat off the beaten track, and is little visited, as it is not considered as having any particular interest; but we know of no better example of cattle-tracks than those which may be found adjacent to this settlement.

Traces of cattle-tracks may be observed along the road which leads from Amesbury towards Stonehenge. Just by the fork of the road where one branch leads to Winterbournestoke and the other to Maddington, the road stands at a higher level than the land on either side of it. At an earlier epoch this low-lying land was under water, and clear evidence of this fact may be seen in the cattle-tracks which descend from the higher ground to the valley below. The ground here on either side of the road has been trodden into comparatively deep tracks in a precisely similar manner to those we have observed at Ogbury Camp.

At a later epoch it would appear that the water in the valley subsided, and that neolithic man constructed a dew-pond so as to continue to supply his herds with water at the same spot. We here again, as at Ogbury, observe the care man took to try and procure water for the cattle in such a position that it was not necessary for them to leave their traditional tracks. The only difference between the two is that the dew-pond at Ogbury was built at the top of the hill, and the one we are now considering near Stonehenge was built in the valley. Presumably at this



XXIV.—VIEW OF CATTLE-TRACKS NEAR TO FIGSBURY RING.

spot, so close to the sacred grounds of Stonehenge, there was not the same danger to the herds as existed in the valley of the Avon near Ogbury Camp.

If one looks in a southerly direction along this valley one may see, at a point less than a quarter of a mile beyond the dew-pond, that a small and comparatively modern building has been erected ; this was constructed to contain the gearing of a pump.

It would be interesting to know what is the actual difference of the water level now, as compared with the level at which the water stood when the cattle were able to obtain their water in the valley, and subsequently at the dew-pond.

Stonehenge lies but a few hundred yards along the road, and the fascinating and mysterious attractions of this structure are of so absorbing a nature that few of the passers-by observe the corrugations in the land which we have been attempting to describe.

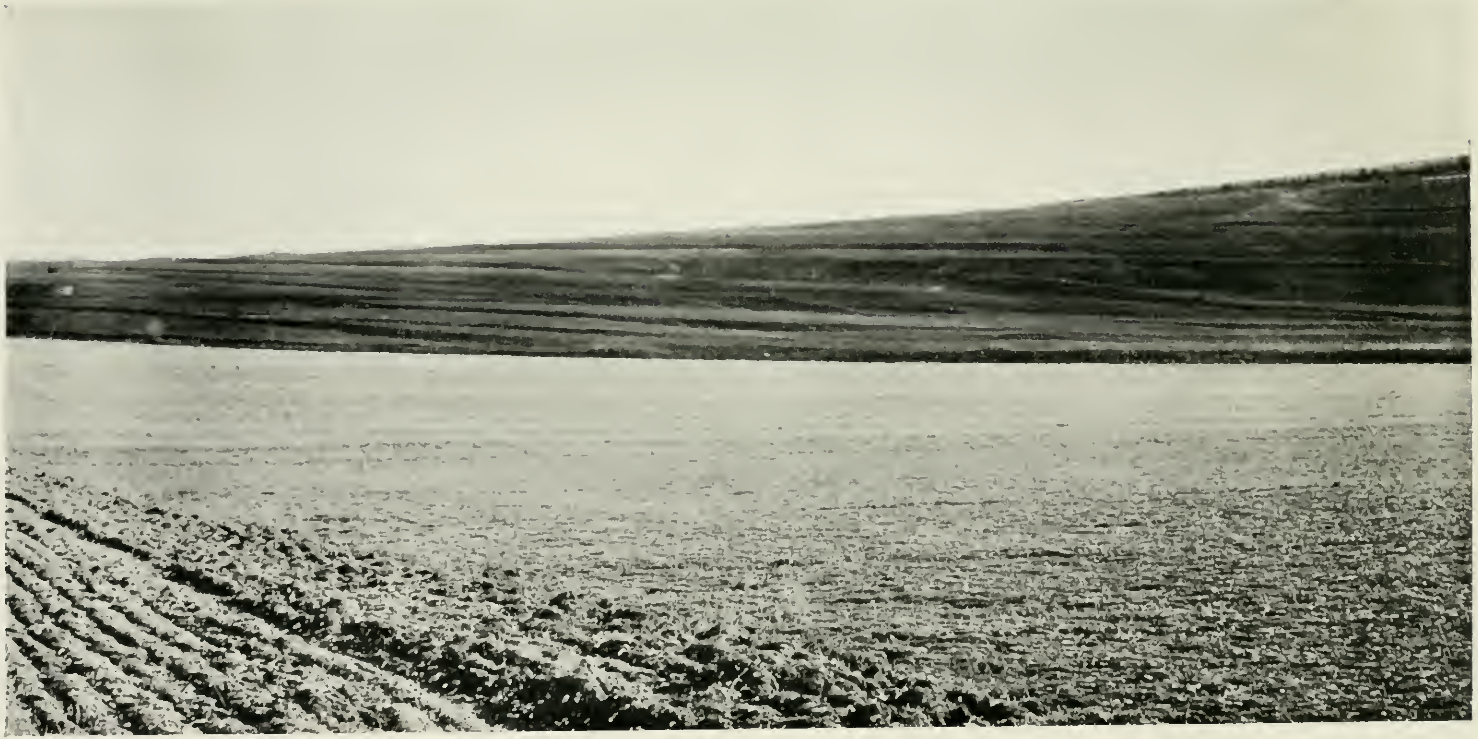
At the top of the gently sloping side to this valley, and on the Amesbury side, a clump of trees may be seen ; and around this clump of trees is a low embankment not more than three or four feet high. There are many openings in the embankment, and it seems to us that this enclosure was merely a cattle-enclosure. The absence of any form of defence again shows that the land adjacent to Stonehenge was considered safe from attack. The cattle-tracks we are here describing were doubtless formed by the cattle which were herded together within this enclosure.

On some parts of the land one may see the whole side of a hill furrowed by these tracks. A curious example of this may be seen near to Figsbury Ring on the hillside above the road leading from Salisbury to Stockbridge. At the point in this road where the Roman road, starting from Old Sarum, strikes the one to Stockbridge, these scorings are particularly well marked and extensive.

Figsbury Ring is but a quarter of a mile north of the Stockbridge Road, and it seems possible that these corrugations of the land indicate that the cattle were contained within the Ring.

Figsbury Ring is of the same class of settlement as Old Sarum ; that is to say, there is a central citadel defended by a surrounding trench ; beyond this trench there is a flat terrace of land, around which again is another encircling entrenchment.

The broad ways which lead through the outer encircling entrenchment to the flat terrace of land seem to us to indicate clearly that they were so constructed to admit herds of animals ; whereas the approaches to the central citadel from the flat terrace are comparatively narrow, as at Old Sarum. We are strongly drawn to the conclusion that the flat terrace of land contained between the outer and the inner trench around the citadel was entirely given up to the herding of the animals, and that the humans alone occupied the citadel. By this arrangement, which is clearly indicated by the different widths of the openings, the



XXV.—DISTANT VIEW OF CATTLE-TRACKS NEAR FIGSBURY RING.

animals upon which the life of the humans depended would be always under observation.

Unfortunately, the land immediately surrounding and within Figsbury Ring has been brought under cultivation, and it is therefore impossible to say with certainty that the cattle-tracks, which are so apparent close to the road, did ultimately lead to Figsbury Ring.

In conclusion we may observe that the trenches, which may be observed upon the Ordnance Surveys, and which are described as ditches, are, we fancy, in many instances simply formed by the feet of the herds trampling during centuries over the same lines, and that they are in no way connected with any form of defence.

A more careful inspection than we have been able to bestow upon the subject will, we fancy, prove that there is a definite connection between the cattle-tracks and the various camps in the immediate neighbourhood of which they are generally found.

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